SHARP

MODEL
MODELLE
MODELL

QA-1200

MODELLO
MODELO
MODEL

COLOR COMPUTER/VIDEO PROJECTION PANEL

ÉCRAN DE PROJECTION COULEUR POUR VIDEO/ORDINATEURS

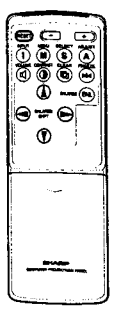
COMPUTER/VIDEO-FARBPROJEKTIONS-PANEL

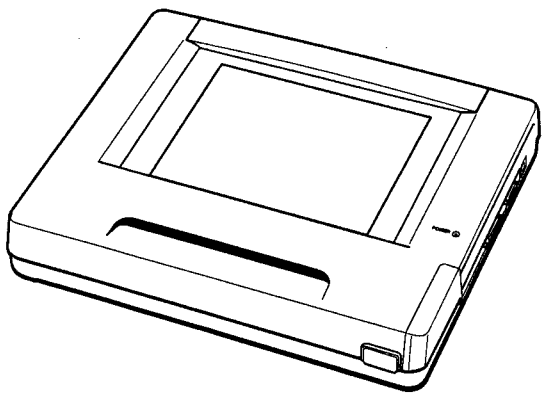
PANNELLO DI PROIEZIONE A COLORI PER COMPUTER/VIDEO

PANEL DE PROYECCIÓN EN COLOR PARA COMPUTADORA/VIDEO

KLEUREN COMPUTER/VIDEO-PROJECTIEPANEEL

OPERATION MANUAL
MODE D'EMPLOI
BEDIENUNGSANLEITUNG
MANUALE D'ISTRUZIONI
MANUAL DE INSTRUCCIONES
GEBRUIKSAANWIJZING





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This apparatus complies with the requirements of EN 55022, 02. 1987 and BS 800:1988.

Cet appareil répond aux spécifications de la EN 55022, 02. 1987.

Dieses Gerät stimmt mit den Bedingungen der EN 55022, 02. 1987 überein.

Questo apparecchio è stato prodotto in conformità alle EN 55022, 02. 1987.

Este aparato cumple las especificaciones de la EN 55022, 02. 1987.

Dit apparaat voldoet aan de vereiste EN 55022, 02. 1987.

This equipment complies with the requirements of Directives 89/336/EEC and 73/23/EEC as amended by 93/68/EEC.

Ce matériel répond aux exigences contenues dans les directives 89/336/CEE et 73/23/CEE modifiées par la directive 93/68/CEE.

Dieses Gerät entspricht den Anforderungen der EG-Richtlinien 89/336/EWG und 73/23/EWG mit Änderung 93/68/EWG.

Quest' apparecchio è conforme ai requisiti delle direttive 89/336/EEC e 73/23/EEC, I alle successive modifiche introdotte dalla direttiva 93/68/EEC.

Este aparato satisface las exigencias de las Directivas 89/336/CEE y 73/23/CEE, modificadas por medio de la 93/68/CEE.

Dit apparaat voldoet aan de eisen van de richtlijnen 89/336/EEG en 73/23/EEG, gewijzigd door 93/68/EEG.

ENGLISH

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SPECIAL NOTES

Thank you for purchasing this SHARP Product. We hope it will give you many years of trouble-free operation. But for the best performance, read this manual carefully. It will guide you in operating your SHARP product.

The Sharp Computer/Video Projection Panel incorporates the latest in Thin Film Transistor Liquid Crystal Display (LCD) technology. While this LCD is capable of producing projected images which are bright and high in contrast, please note that all liquid crystal displays also have very strict maximum temperature limitations. This projection panel should not be used with any overhead projector (or in any environment) which might cause the operational temperature of the LCD to exceed **45°C (113°F)**.

This projection panel should only be used with high quality **transmissive** type overhead projectors. It is not designed to be used with the compact reflective mirror type overhead projectors. For the best colorimetry and brightness, a high luminosity type OHP (overhead projector) using a metal-halide lamp (Approx. 575W) with high cooling ability is recommended.

NOTE

Sharp warrants that the projection panel will provide a 99.996% usable active dot ratio. This means that out of the total of 921,600 dots, the projection panel may contain a maximum of 35 inactive dots. These minute inactive dots may appear illuminated on the display, however, they will not affect picture quality, or the life expectancy of the unit.

This projection panel should not be used in rooms with very bright lighting. For best results, the lights in the room should be dimmed.

FOR YOUR RECORDS

Please record below, serial numbers located on the bottom of the unit. Please retain this information for reference in case of theft or for service repair.

Model number: **QA-1200**

Serial number: _____

Date of purchase: _____

Place of purchase: _____

The following items referred to in this manual are not included with this unit: personal computers, overhead projectors, computer software, and carrying cases. Please contact your Sharp dealer for information on purchasing these items.

1. INTRODUCTION

This Sharp Projection Panel makes it possible to display computer or video images onto a large screen or wall, using an overhead projector (OHP) to illuminate and project the images.

- The unit uses an active matrix TFT LCD panel with up to 1,700,000 colors displayed. When the projection panel is placed on an OHP, computer text, graphics, and video can be enlarged. For large groups to view presentations in environments such as conferences, seminars, and classrooms.
- The LCD display area has 640(RGB) × 480 dots, creating crisp, bright, sharp images. The Projection Panel is compatible with many different types of personal computers using the cables provided.
- The unit has built-in video which allows NTSC, PAL and SECAM signals to be projected.
- On screen menus to allow easy set up.
- An external monitor connector allows an analog computer monitor to be connected for simultaneous display with the projection panel.
- A rear projection function allows the image to be reversed if rear screen projection is required.
- The unit supports audio with a built-in speaker and audio input/output connectors.

2. DESCRIPTION OF MAIN COMPONENTS

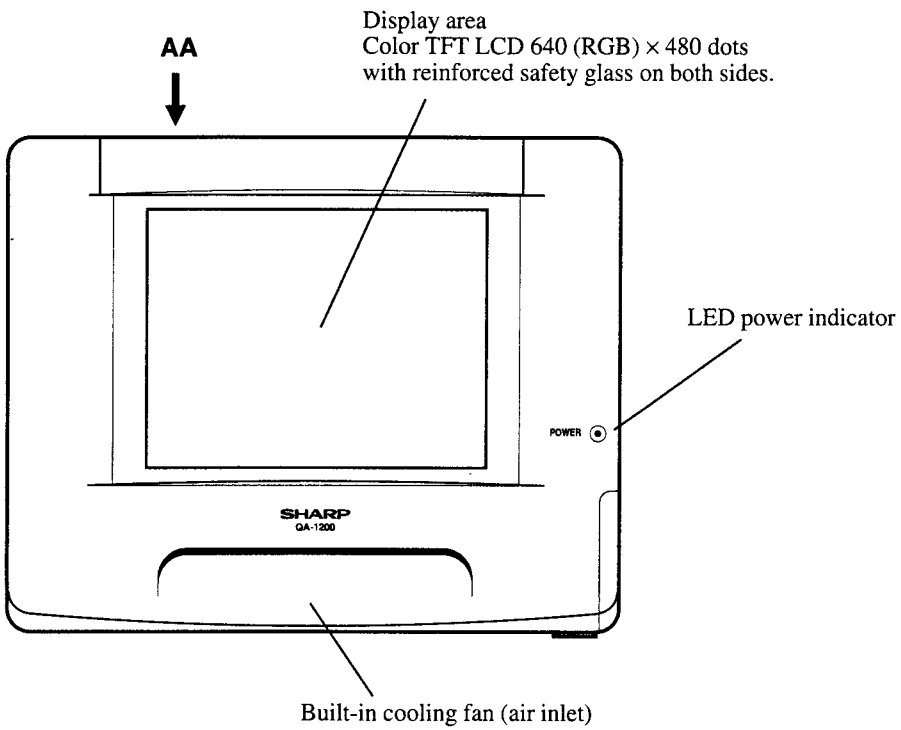
Unpack and check that all of the components are included in the shipping carton. Please keep this Operation Manual for future reference.

Items included are:

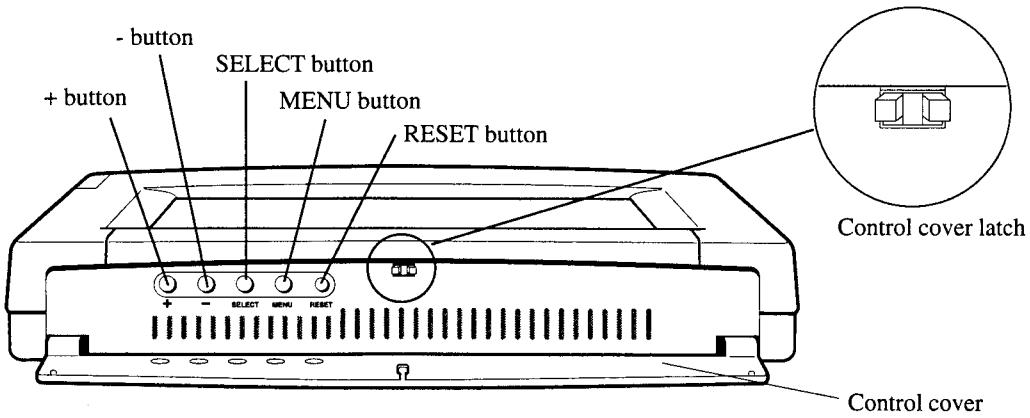
- Main unit
- VGA/MCGA signal cable
- External Macintosh monitor cable
- AC adaptor
- AC cable
- Four "AA" alkaline batteries for remote control unit
- Operation Manual
- Remote control unit
- Macintosh II signal cable
- Two audio cables

Main unit

Top view



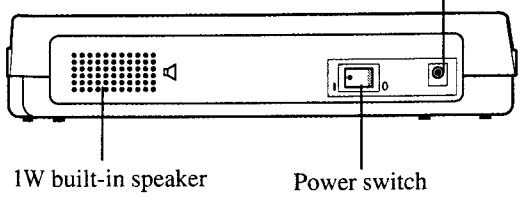
Side AA (View with the cover opened)



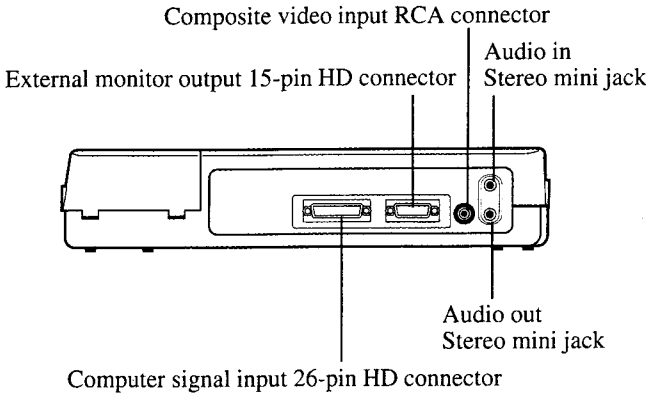
When opening the cover, gently press the upper center portion of the cover with a finger, then pull it carefully toward you to open.

Side view

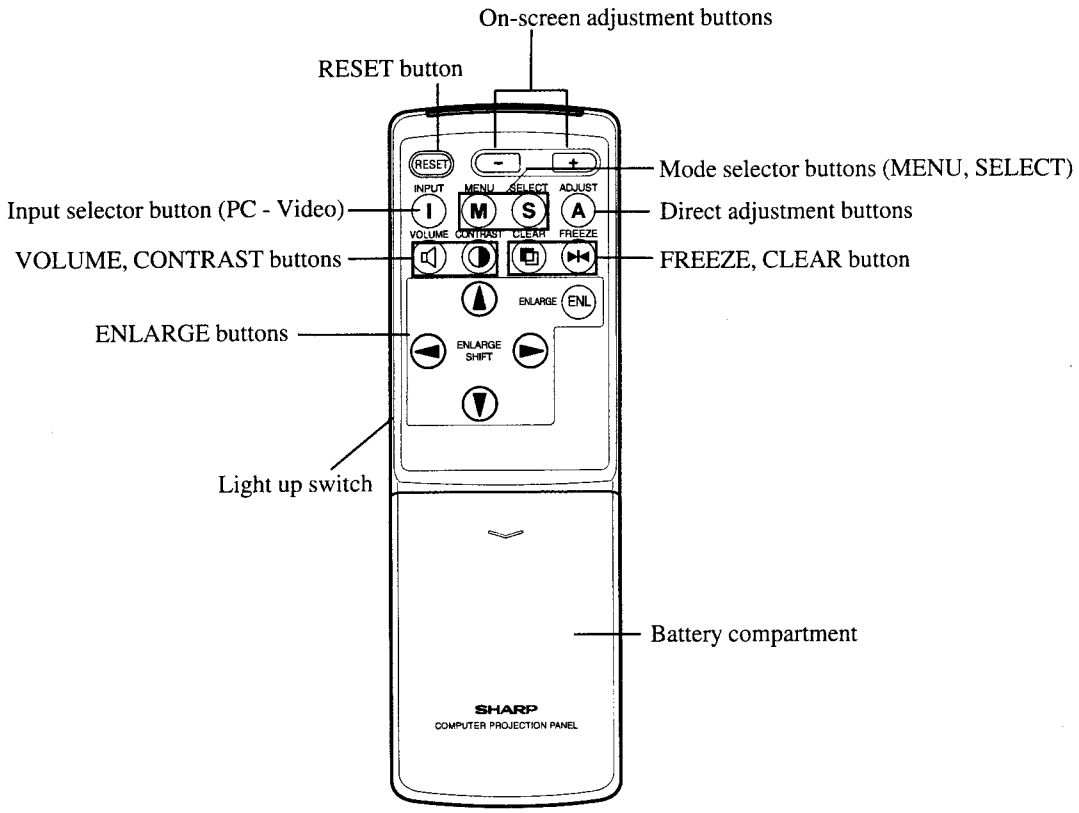
Left



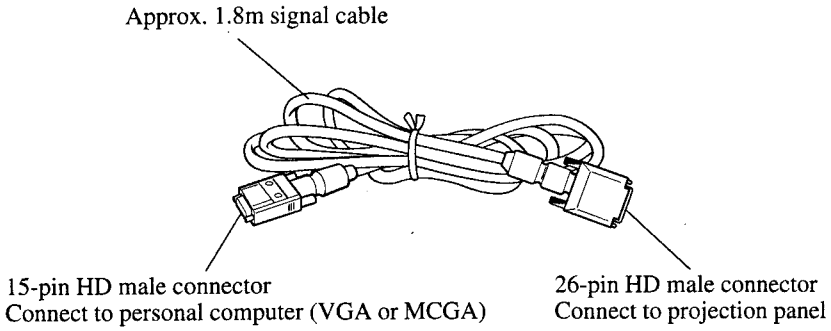
Right



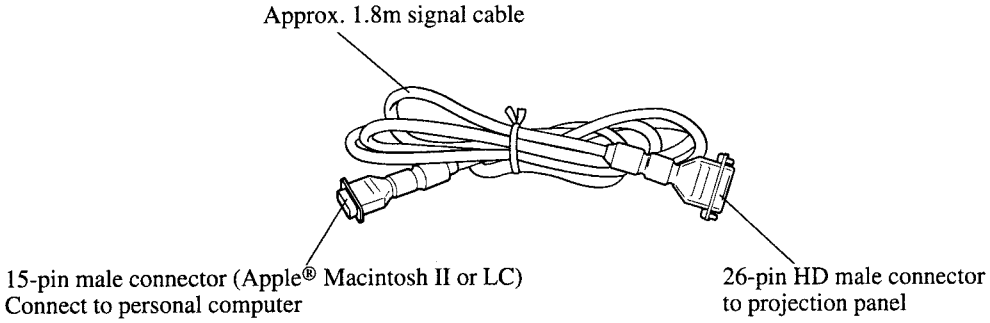
Remote control unit



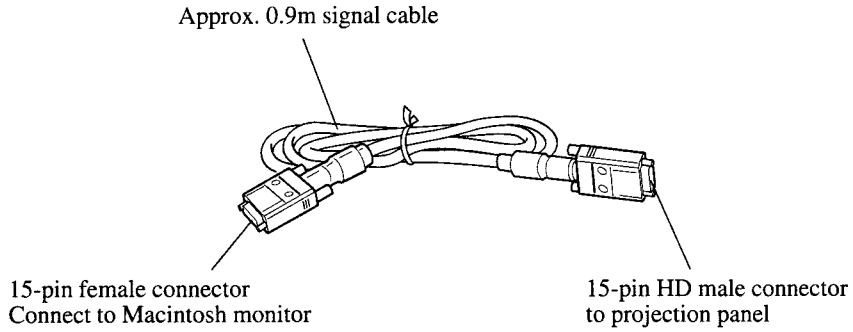
VGA/MCGA Signal Cable (DSOCZ2028YAZZ)


Approx. 1.8m signal cable
15-pin HD male connector
Connect to personal computer (VGA or MCGA)
26-pin HD male connector
Connect to projection panel

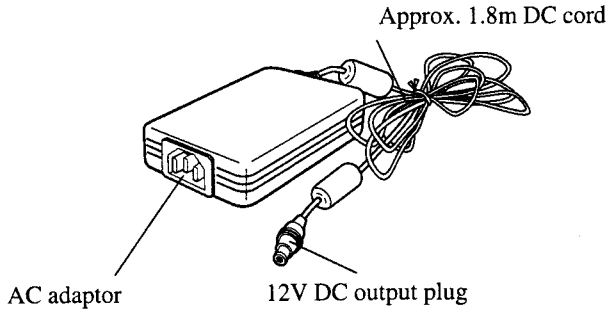
Macintosh II Signal Cable (DSOCZ2016YAZZ)


Approx. 1.8m signal cable
15-pin male connector (Apple® Macintosh II or LC)
Connect to personal computer
26-pin HD male connector
to projection panel

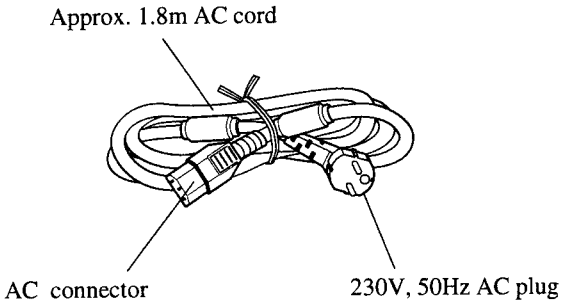
External Macintosh Monitor Cable (DSOCZ2030YAZZ)



AC Adaptor (DADP-2004YAZZ)

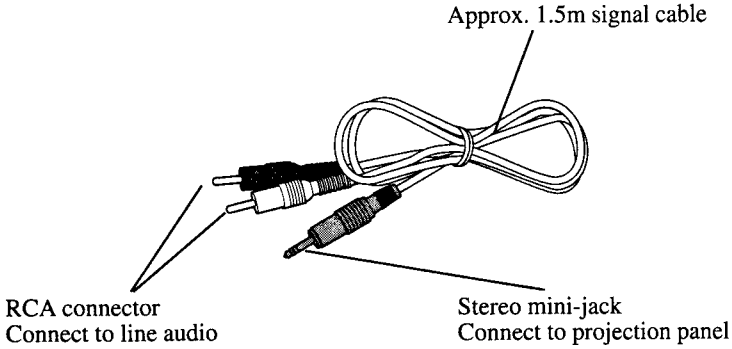


AC Cable (DACCV2005YAZZ)



Operation Manual

Audio Cable (DSOCZ2034YAZZ) × 2



3. SET UP

Set up the projection panel as follows.

The projection panel should not be used with any overhead projector (OHP) which may cause the panel's internal LCD to reach temperature of 45°C(113°F).

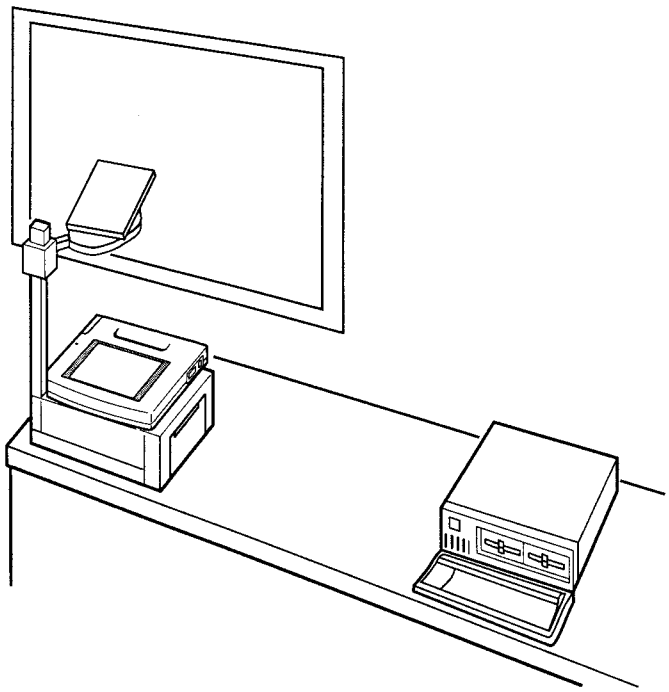
Positioning

1) Turn the power ON to the OHP and place it in the best position for projection against a wall or screen. Turn OFF the OHP.
2) Connect your computer in a convenient position next to the OHP.
3) The projection panel should be placed so that the fan intake vent is facing to the wall or screen.

NOTE

While the OHP's power is turned ON, do not leave the projection panel power OFF.

Center the panel's display area with the stage area of the OHP.



Connection

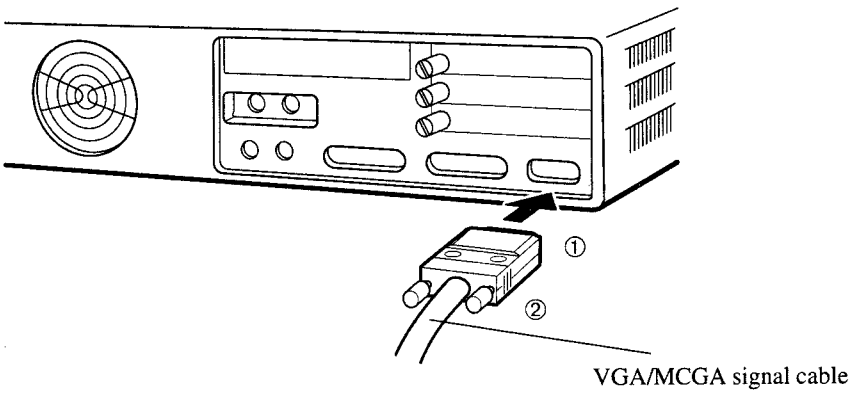
Before making any electrical connections, please make sure that both the OHP and the personal computer are turned off.

WARNING

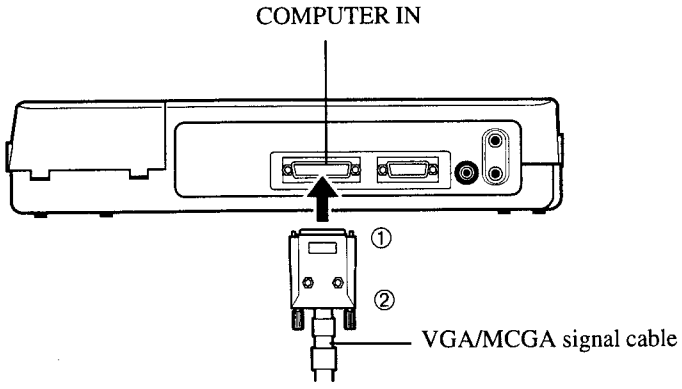
When connecting the projection panel to a computer, only use the interface cables provided. Cables for computers which are not VGA/MCGA, Apple® Macintosh II/LC or compatible computers, contact your local dealer or Sharp Electronics Corp. Do not use any other cables to connect the projection panel to a computer.

1) Connecting the VGA/MCGA Signal Cable to an IBM® PS/2 or Compatible Computer

The VGA/MCGA signal cable has a 15-pin HD male connector on one end and a 26-pin male connector on the other end.
Plug the 15-pin connector into the 15-pin monitor output connector on the computer.
Fasten the cable with the thumbscrews.



Plug the 26-pin connector end of the VGA/MCGA cable to the COMPUTER IN connector on the projection panel. Next, fasten the cable with the thumbscrews.

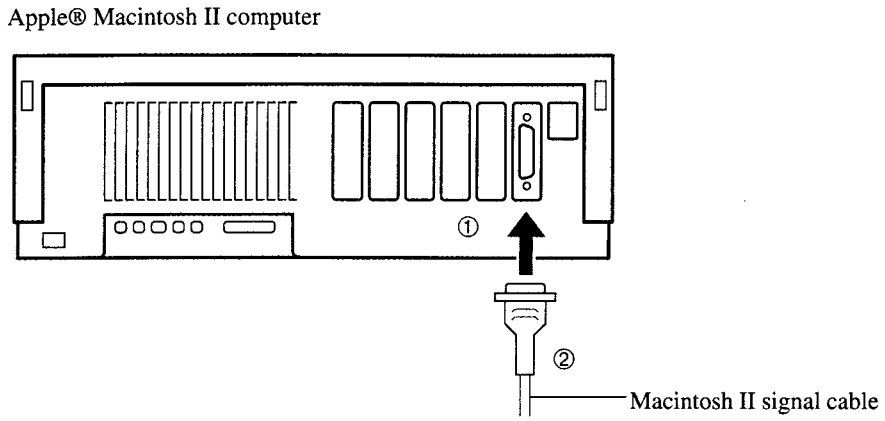


2) Connecting the Macintosh II Signal Cable to an Apple® Macintosh II

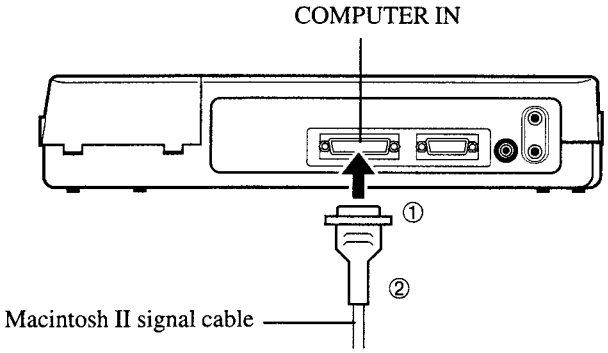
The Macintosh II signal cable has a 15-pin male connector on one end and a 26-pin HD male connector on the other end.

Plug the 15-pin connector into the 15-pin monitor output connector on the computer.

Use a screwdriver to fasten the connectors securely together.



Plug the 26-pin connector end of the Macintosh II cable to the COMPUTER IN connector on the projection panel.
Use a screwdriver to fasten the connectors securely together.



3) Connecting to Macintosh Computer

Because the Macintosh computers do not have a video connector, you must install an optional internal adaptor.

The Macintosh, 512, Plus, SE, SE/30 and Classic require these adaptors. These are available from your local Authorized Sharp dealer.

4) Connecting a Laptop or Note book computer

Most Laptop and Notebook computers have "External Monitor Ports". Please refer to your computer's operation manual for instruction how to connect and access this port. Some software command or switch may have to be set to view images on the projection panel.

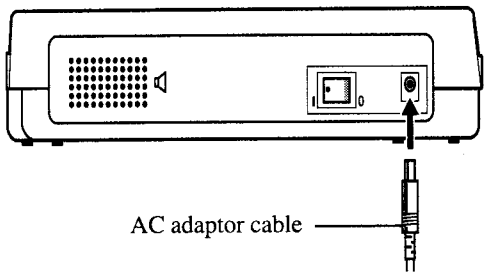
NOTE

The projection panel can not be directly connected to the Macintosh portable computer. Do not connect the projection panel to the Macintosh portable computer. Serious damage to the computer or the projection panel could result.
Third-party adaptors are available for the Macintosh portable computer and PowerBook 100/140/145/170 computers. Contact your Authorized Sharp dealer.

5) Power Supply Connection

Plug in the DC output plug of the AC adaptor into the DC INPUT socket on the projection panel (see below).

Make sure that the panel's power switch is in the OFF position, then plug the AC adaptor into an AC outlet.



WARNING

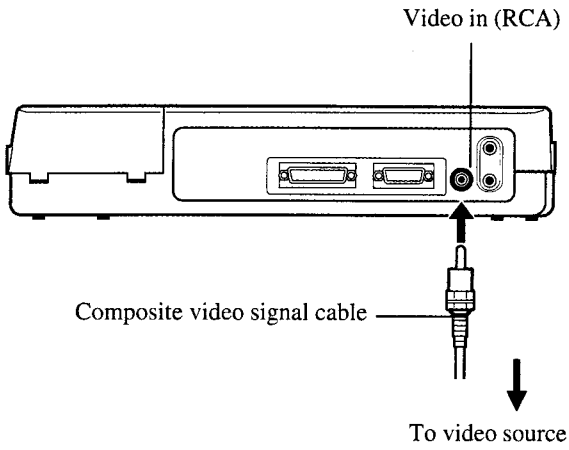
Do not use any other type of AC adaptor with the projection panel. This AC adaptor is a filtered power supply with a safety standard listing and should not be replaced by any other adaptor. This projection panel's AC adaptor is not compatible with the QA-25 or QA-50 AC adaptor.

6) Video input connection

Connect the video signal cable to the composite video input connector. Then press the I (INPUT) button on the remote control to switch between PC and video input on the projection panel.

This unit supports NTSC, PAL and SECAM video standards, and detects the type from the input signal, switching automatically.

The video adjustments are preset at the factory. Adjustments can be made by using the A/V Adjust Menu built into the panel. For A/V adjustments please refer to page 18.

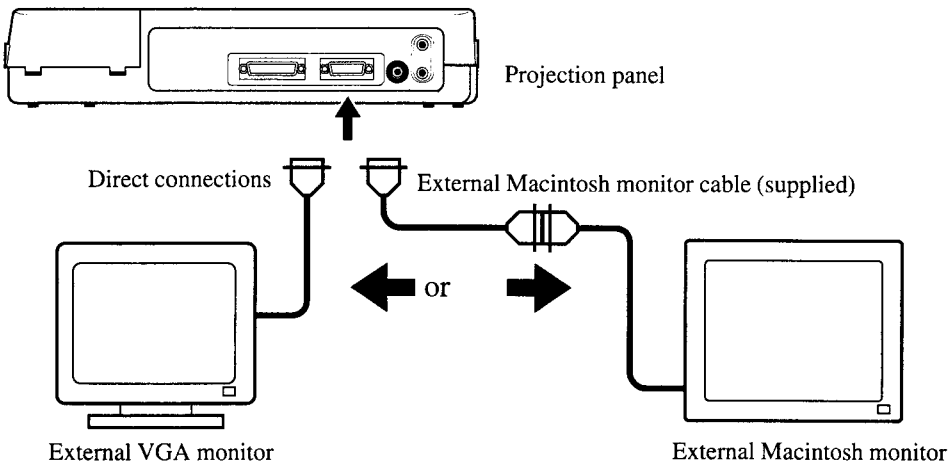


NOTES

To display NTSC, PAL, or SECAM on the projection panel, the video signal must meet the following requirements. (If not, improper display will be obtained.)
(1) It must be a composite video signal complying with system M (NTSC), systems B, G, H and I (PAL), or system B, G, H, D, K and L(SECAM).
(2) The signal level must be 1.0 V peak-to-peak.
(3) The output impedance must be 75 Ω.
When video input of PAL or SECAM signals from sources such as VCR tape are not received properly, switch from the Auto mode to the fixed PAL or SECAM mode in the Display Mode menu. (See page 19.)

7) External monitor connection

Connect your computer monitor to the external monitor output connector, to simultaneously view images on the external monitor and projection panel.



WARNING

Do not connect the external Macintosh cable to any monitor except the following:

Apple Macintosh 12" RGB Monitor (512 × 384)
Apple Color RGB Monitor:13" (640 × 480)
Apple Color RGB Monitor:14" (640 × 480)

NOTES

When using the projection panel with an external VGA monitor, connect the monitor using the cable supplied with it. When using the projection panel with a Macintosh monitor, use the external Macintosh monitor cable supplied with the projection panel. Before using any other type of monitor, carefully check the monitor's interface specifications and make sure that they match the specifications of the projection panel's interface.

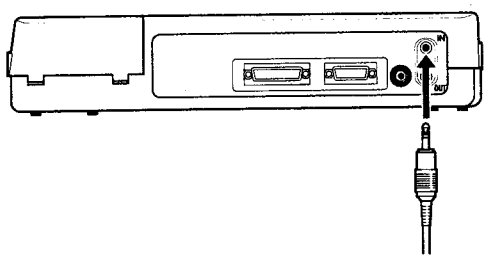
The external monitor output will only display an analog computer input signal. It will not display a digital or video input signal. To split the composite video signal, use a video distribution amplifier. This is available from your local dealer.

8) Audio signal connections

When using audio signals, first make the connections as described here, then use the on-screen menu "A/V ADJUST" to carry out the necessary operations.

- Using the built-in monaural speaker

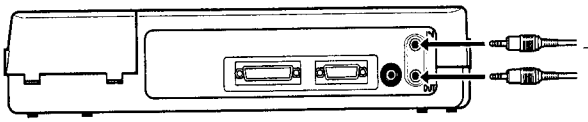
  Connect a mini-jack stereo cable to the audio input connector on this unit.



Connect the source line audio output to the audio input connector on this unit.

- Using external speakers

  In addition to connecting a mini-jack stereo cable to the audio input connector on this unit, use a mini-jack stereo cable to connect the audio output connector on this unit through an external amplifier system to the external speakers. **Always turn off the power supply to the external amplifier system before carrying out this operation.**



Connect the source line audio output to the audio input connector on this unit.

Connect this audio output to a line audio input on an audio amplifier or powered speaker.

NOTES

1) Connecting to the projection panel audio output automatically mutes the built-in speaker.
2) If a monaural signal is connected, the volume from the built-in speaker will be about 1/4 the normal stereo volume. In this case, use a mono-stereo adaptor connection.
3) If a microphone or similar device with a low signal level is connected, the speaker will not produce any sound. Always use an appropriate amplifier for the input signal.

Operating Steps

Before turning power on to the equipment, please note the following precautions.

The projection panel should not be used with any OHP which may cause the panel's internal LCD to reach a temperature of 45°C (113°F) or higher.

NOTE

To ensure proper cooling, keep the control cover open while using the projection panel.

To prevent the projection panel's LCD from reaching this maximum temperature, a very effective cooling fan is built into the panel. **This fan only operates when the projection panel's power switch is turned ON.** Therefore, make sure that the power switch has been turned on first and then turn on the power switch of the OHP.

Because the projection panel is directly compatible with many systems, it has been provided with a built-in **Automatic Setup System** to enable correct display for most display signals.

- 480-line displays (VGA, Macintosh II and Macintosh LC):
  Displays as a 480-line display.
- 400-line displays (VGA and MCGA):
  The top and bottom 40 lines have no signals, and the image is displayed in the center 400 lines.
- 384-lines (Macintosh LC):
  The top and bottom 48 lines have no signal, and the image is displayed in the center 384 lines.
- 350-line displays (VGA, MCGA and EGA):
  The top and bottom 65 lines have no signals, and the image is displayed in the center 350 lines.
- 200-line displays (CGA, Apple II):
  Displayed as a 400-line display. The top and bottom 40 lines have no signals.

NOTE

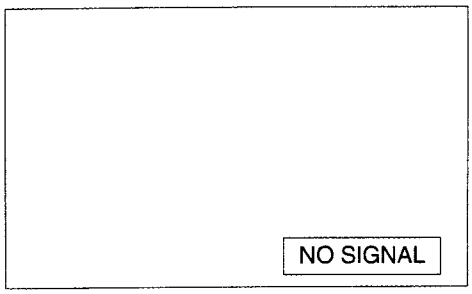
EGA/CGA (MDA/Hercules®) requires an optional cable which is available through your authorized local dealer or parts distributor.

HOW to Operate the Projection Panel for Presentations

(1) Make the appropriate connections before powering on.

(2) Turn on the projection panel and make sure that the cooling fan is working. (As an indication that the panel has been properly turned ON, the Red LED power indicator will light.)

(3) Turn power "ON" to the OHP.
If a personal computer or video source are not connected to the projection panel, a no-signal display appears in the lower right corner on the projected screen.



(4) Turn on the PC to display text or graphic images on the projection panel. Focus the OHP so that the images projected are clearly visible on the overhead projector screen.

(5) Press the RESET button on the remote control unit.

(6) Press the ◑ (Contrast) button on the remote control and use the +/- mode adjust buttons to adjust the contrast of the projected image.

(7) Press the I (Input) button on the remote control to switch between the computer and video signal inputs.

(8) To clear the screen during a presentation, press the ⧉(Clear) button on the remote control unit. Press the ⧉ (Clear) button again to restore the image.

(9) Use the ENL (Enlarge) button on the remote control to enlarge the upper left portion of the screen to double size.

Once in the enlarge modes
Use the shift buttons (▲, ▼, ▶ and ◀) on the remote control to shift the remaining portion of the image into view. Press the ENL button again to return to normal mode.

NOTE

ENLARGE mode is only operational in PC mode.

(10) At the end of the presentation the OHP should be turned off first. Then the projection panel may be turned off.

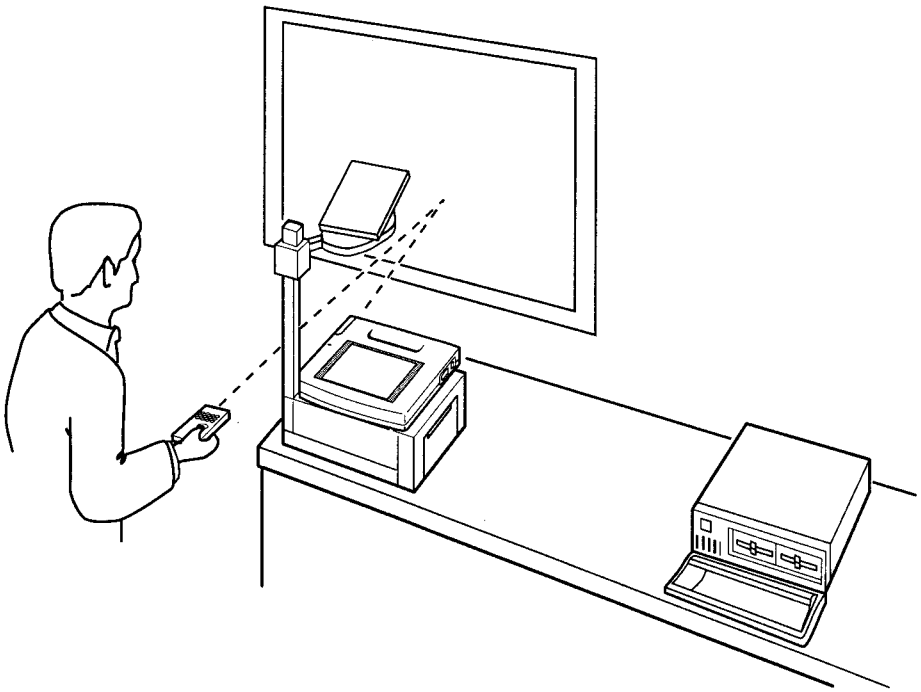
WARNING

1) Do not leave the projection panel turned off while the OHP is ON. The heat from the OHP lamp may damage the display if the panel's fan is not operating.
2) Do not place paper or transparencies on the cooling air inlet of the projection panel or block the inlet in any way.

NOTE

Remote Control Operation

The signal from the remote control is received by the projection panel on the side which faces the projection screen. To operate the panel from behind the OHP, point the remote control towards the screen. The infrared signal will be reflected by the screen towards the projection panel and all functions may be controlled.



4. OPERATING THE UNIT AND ON-SCREEN MENU ADJUSTMENTS

The projection panel automatically adjusts the LCD display area according to the computer or video source. The projected image can be modified by selecting screen menu options with the projection panel's control buttons.

The projection panel has five control buttons: [RESET], [MENU], [SELECT], [-], [+]. The following is a description of how these functions work.

RESET

Pressing the RESET button sets the projection panel's adjustable modes to the default setting corresponding to the computer or video source currently connected. When this button is pressed, the display mode is set to Normal.

ALL RESET

Press RESET and immediately press the SELECT and - buttons simultaneously. This selects default settings for all of the panel's compatible computer or video sources and restores the Input mode selection to the PC setting.

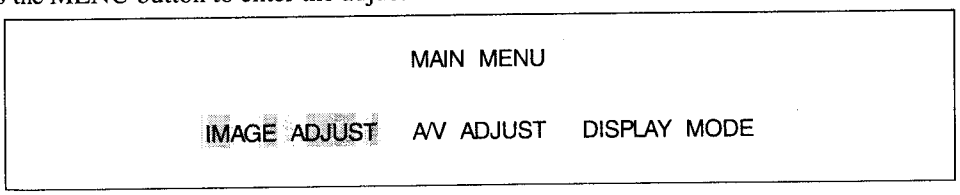
When the ALL RESET operation is executed, an "ALL RESET" on-screen display will appear in the lower right corner of the image for several seconds.

COMPUTER/ VIDEO selection

On the Panel: press and hold the SELECT button, then press the + button to switch inputs. On the Remote: press the "I" Input button to switch inputs.

MENU

Press the MENU button to enter the adjustment mode.

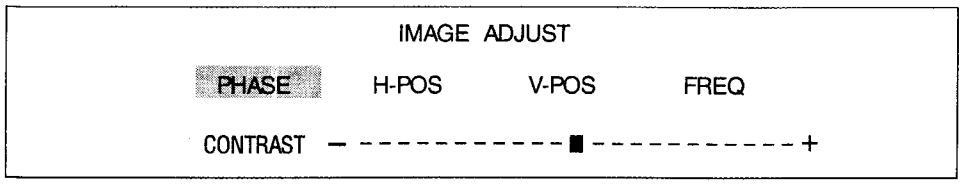


Use the + and - buttons to shift the highlight box over the item to be adjusted. Press the SELECT button to display the appropriate menu.

- IMAGE ADJUST: This mode is used for adjustments of screen flicker, movement vertically and horizontally, frequency, and contrast.
- A/V ADJUST: This mode is used for adjustments of the volume from the built-in speaker or external speakers, and adjustment of the video image.
- DISPLAY MODE: This mode is used for selecting the projection mode, the number of colors and front or rear projection.

4.1 IMAGE ADJUST mode

1) Use the SELECT button to shift the highlight box over the item to be adjusted.



2) Use the + and - buttons to change the setting value.

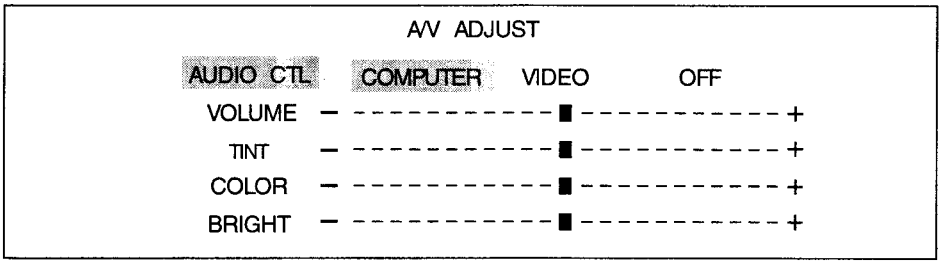
	Meaning	Pressing -	Pressing +
PHASE	Adjust screen flicker.	Decreases	Increases
H-POS	Adjust horizontal position.	Shifts left	Shifts right
V-POS	Adjust vertical position.	Shifts down	Shifts up
FREQ	Adjust the frequency.	Decreases	Increases
CONTRAST	Adjust the contrast.	Decreases	Increases

NOTE

The +/- line bar only indicates Contrast adjustment.

4.2 A/V (audio/video) ADJUST mode

1) Use the SELECT button to highlight the item to be adjusted.



2) Press the + and - buttons to change the setting value.

Item	Meaning	Pressing -	Pressing +
AUDIO CTL	Switch the built-in speaker or AUDIO output on and off.	Select one of PC (COMPUTER only on), VIDEO (VIDEO only on), or OFF (all off).	
VOLUME	Adjust the volume from the built-in speaker or external speakers.	Decreases	Increases
TINT	Adjust the picture hue.	Becomes more purple	Becomes greener
COLOR	Adjust the saturation of the image.	Decreases	Increases
BRIGHT	Adjust the brightness of the image.	Decreases	Increases

NOTE

The TINT adjustment is for NTSC signals. Tint has no effect in PAL and SECAM modes.
Attempting to change the tint adjustment other than in NTSC mode causes the message "INVALID" to appear flashing in the upper right corner.

4.3 DISPLAY mode

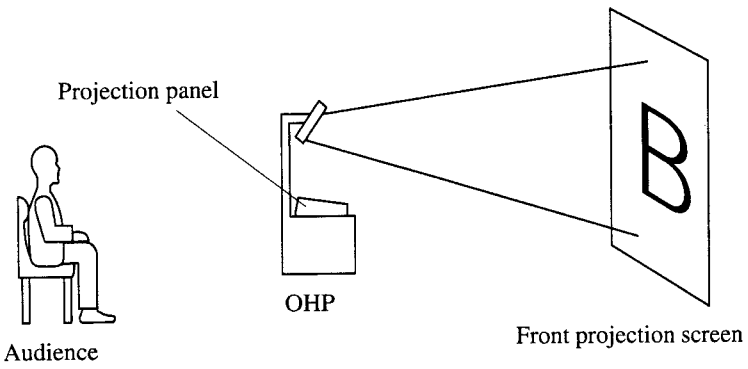
1) Use the SELECT button to highlight the item to be adjusted.

DISPLAY MODE			
DISPLAY	NORMAL	CLEAR	FREEZE
MAC	MAC II	MAC LC	
VGA	640 DOTS	720 DOTS	
VIDEO	AUTO	PAL	SECAM
COLOR	1.7M	4096	
PROJECTION	FRONT	REAR	

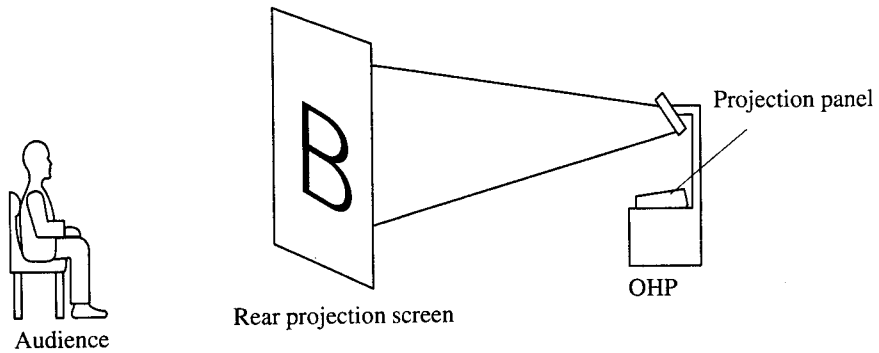
2) Press the + and - buttons to change the setting value.

DISPLAY: Select NORMAL, CLEAR (white screen) or FREEZE.
MAC: MAC II or MAC LC selection
VGA: 640-pixel or 720-pixel mode selection
(When 640-pixel mode is selected, 720-pixel image is compressed to 640 pixels.)
VIDEO: Select Auto (automatic video recognition), PAL (fixed PAL mode), or SECAM (fixed SECAM mode).
COLOR: Select 1.7 million colors or 4096 colors.
PROJECTION: Select front or rear projection.

(1) Front-projection (projector on the same side of the screen as the audience)



(2) Rear-projection (projector behind the screen)



5. REMOTE CONTROL BUTTON OPERATIONS

The remote control unit has backlit buttons, making them easy to see in dark rooms.

The remote control unit allows all the necessary operations during a presentation to be carried out from a position away from the projection panel.

Remote control unit operation

- RESET, -, +, MENU and SELECT have the same function as on the main unit.
- A (Adjust), ⧉ (Clear), 🔊 (volume), ◑ (Contrast) and ⏯ (Freeze) provide functions which can be carried out using the main unit on-screen menu, but since these are frequent operations they provide direct access to the operations without needing to display a menu.
- I (Input) and ENL (Enlarge) are functions provided only on the remote control unit.

A (Adjust)

This button cycles through the H-POS (horizontal position), V-POS (vertical position), FREQ (frequency), and PHASE (phase) adjustments in order as follows.

H-POS —> V-POS —> FREQ —> PHASE —> —> H-POS —>...

The adjustments are made with the + and - buttons.

⧉ (Clear)

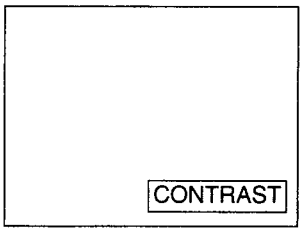
This is the clear screen mode.
To stop projecting an image or clear the screen without turning the panel's power off, press the ⧉ (Clear) button on the remote control. To restore the image and resume the presentation, press the ⧉ (Clear) button again.
When the clear screen mode is selected, "CLEAR" will appear on the screen for several seconds.

🔊 (Volume)

This switches to the mode for adjusting the volume from the built-in speaker or external audio equipment connected to the output connector on the main unit. The adjustments are made with the + and - buttons.

◑ (Contrast)

Use the contrast adjustment to set the contrast of the projected image.
Press the ◑ (CONTRAST) button on the remote control unit, then use the +/- buttons to adjust the contrast for the best image.



+: increases contrast
-: decreases contrast

Pressing the ◑ (Contrast) button on the remote control brings the CONTRAST on-screen display to the screen. After adjusting for best display, press the ◑ (Contrast) button again to clear the CONTRAST display.

⏯ (Freeze)

Pressing the ⏯ (Freeze) button freezes the display of the current image. Upon selecting this mode, "FREEZE" appears on the screen for several seconds.

NOTE

This does not pause the computer.

I (Input)

This button changes the input signal, cycling through the following possibilities.

Computer ---> Video ---> Computer ---> ...

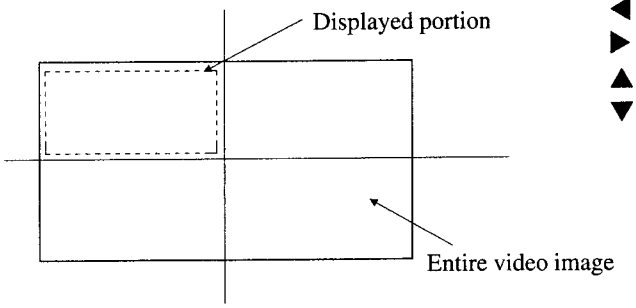
ENL (ENLARGE)

In this mode the center of the image is enlarged to double its size. Pressing the ENL (Enlarge) button, while in normal mode, switches to enlarged mode.

When the ENLARGE mode is selected, an ENLARGE on-screen display appears on the screen for several seconds.

When this mode is selected, the display zooms in on the upper left portion of the image. (See the figure below.)
Use the cursor to move the displayed portion about the whole video image.
Press the ENL (Enlarge) button to return to the normal mode.

Projection panel display



SHIFT keys

◀ moves left
▶ moves right
▲ moves up
▼ moves down

NOTE

ENLARGE mode is only operational in PC mode.

6. TROUBLESHOOTING

Before calling for service, please closely review the following troubleshooting information.

Problems:	Possible Solution:
(1) No image appears on the projection panel's display area.	● Make sure that the panel's AC adaptor is properly connected. ● Make sure that the RGB signal cable is properly connected to both the computer and the panel. ● Verify that the panel's power switch is set to the on position. ● Verify that the computer's RGB signal output is compatible with the projection panel's specifications. (See specifications on pages 28-32.) ● Verify that the RGB signal level is appropriate for your software. ● Check that the unit is not in clear mode. ● If using a Laptop computer, check the computer's operation manual for external monitor hook up. ● Verify that the video source has power. ● Verify that the video source has tape or disc.
(2) Display is off-centered or flickering, certain images do not appear on the display, or the image appears distorted.	● Verify that the computer's RGB signal output is compatible with the projection panel's specifications. ● Verify that the RGB signal level is suitable to your software. ● Press reset. ● Adjust horizontal and vertical to center image. ● Adjust CONTRAST and phase. ● If the projected image flickers when using analog signals, adjust the contrast. ● If vertical bars appear, adjust frequency.
(3) The contrast of the display is not uniform.	● Make sure that the OHP is properly adjusted. ● Make sure that the OHP is a good quality transmissive type, and that the heat from the projector is not causing the temperature of the LCD to reach **45 °C(113°F)**. ● Make sure that the air flow vent is not blocked. ● Make sure the fan is working.
(4) The projected image is difficult to read, out of focus, or reversed.	● Make sure that the OHP is a good quality **transmissive** type (and not a compact reflective mirror type). ● Make sure that the OHP properly focused. Note that the correct OHP focus for the projection panel differs slightly from that which is correct for a film-type transparency. ● Verify that the computer's RGB signal output is compatible with the projection panel's specifications. (See specifications on pages 28-32.) ● If the projection panel is being used in a room with very bright lights, image quality may be substantially improved by dimming the lights. ● Check the front- or rear-projection selection.

(5) The remote control unit does not operate

- Are the batteries in the remote control unit low?
- Check that the batteries in the remote control unit are inserted with the correct polarity.
- Is the remote control unit pointing in the correct direction so that the infrared signal can bounce off the screen and reach the receptor on the projection panel main unit?
- Check that the remote control transmitter is not too far from or too close to the projection panel.
- Is there sunlight or bright illumination such as fluorescent light shining on the infrared receiver on the projection panel main unit?
- Check that no other remote control equipment is being used at the same time.

7. MAINTENANCE

The projection panel requires very little maintenance.

Check that the power switch is off before performing any maintenance on the panel.

Cleaning the top and bottom glass surfaces

When necessary, clean the glass surfaces of the panel using a soft cloth moistened with any standard glass cleaner.

Cleaning the plastic cabinet

Wipe the cabinet using a soft cloth moistened in a diluted solution of mild detergent.

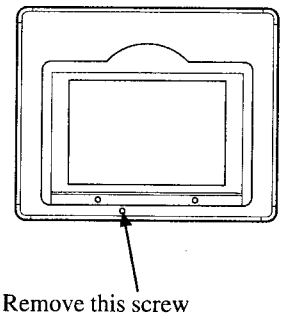
Cleaning the inner surfaces of the glass

Ordinarily, the inner surface of the glass does not require cleaning. However, if dust should appear on the inside of the glass, very carefully remove the glass and wipe off the dust as follows. Procedures are the same for the glass on both sides of the projection panel.

- Cleaning the top glass

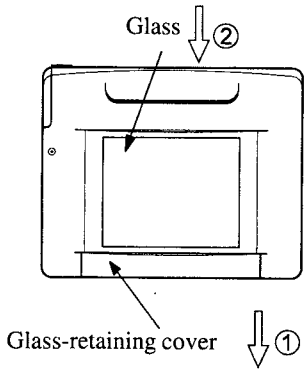
(1) Turn the unit upside down, and remove the one screw indicated in the figure.

Bottom view



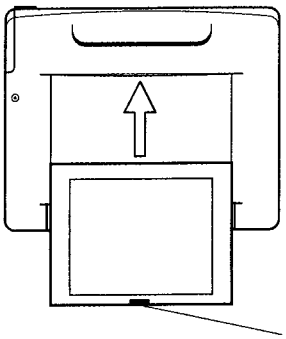
(2) Turn the unit the right way up, and remove first the glass-retaining cover, then the protective glass.

Top view



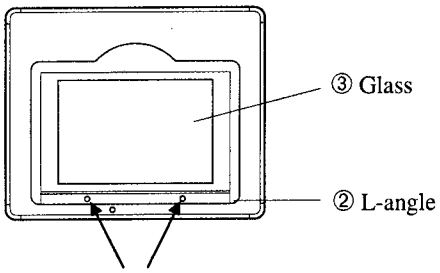
(3) Carefully wipe the underside of the glass. If there is any dust on the surface of the liquid crystal unit, remove it carefully.

(4) Replace the glass and the glass retaining cover in their original position, and fasten the one screw.

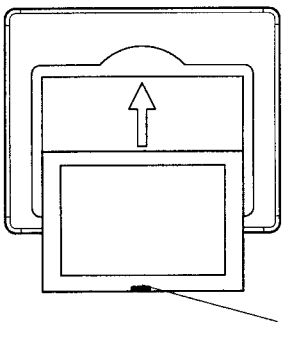


- Cleaning the bottom glass

(1) Turn the unit over and remove the two screws. Then remove the L-angle and take out the glass.



(2) Carefully wipe the inside surface of the glass. If there is any dust on the surface of the liquid crystal unit, remove it carefully.



NOTE

When reinstalling the glass, make sure that it is properly oriented. Fasten the two screws **so that the L-angle and the Glass-retaining cover keeps the glass securely in place.**

WARNING

The LCD panel is fragile. Be extremely careful to avoid striking it with sharp objects or pressing on it with excessive force.

Ensure that the glass covers are replaced exactly the same way round. Otherwise, the printed inscription may obscure the projection area.

Do not remove either cover while the unit is operating.

Do not use thinners or other volatile solvents, or chemically impregnated cleaning solvents on the unit. In contact with the plastic components these may cause discoloration or mechanical damage, and may result in failure of the unit.

The glass covers are fragile. Handle them carefully when removed from the unit.

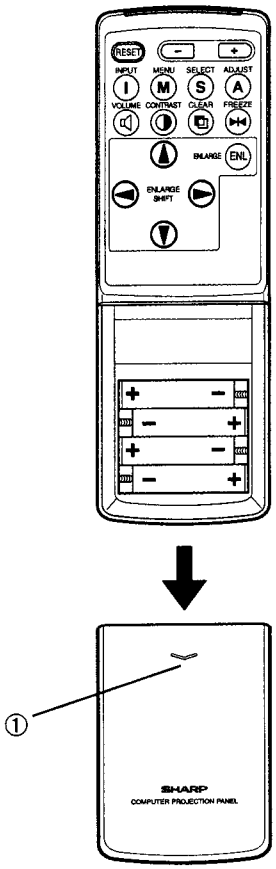
NOTES

1) Do not clean with chemically-treated cloths, benzine, or paint thinner. These kinds of cleaning materials will chemically alter the cabinet material, resulting in cracking, peeling, and damage to the finish.

2) Do not spill any liquid into the unit. Liquid spills can cause irreparable damage.

Installing the Remote Control Unit Batteries

1) Press in at ① and slide the battery compartment cover to remove it.
2) Insert the four supplied AA/LR6 alkali batteries into the battery compartment, being careful to match the polarity with the + and - indications.
3) Replace the battery compartment cover.
4) Replace the batteries when the maximum operating range of the remote control unit begins to decrease.



Notes on batteries

- Do not mix old and new batteries.
- If not using the remote control unit for a long time, remove the batteries.
- Do not short-circuit the batteries, or attempt to recharge them.

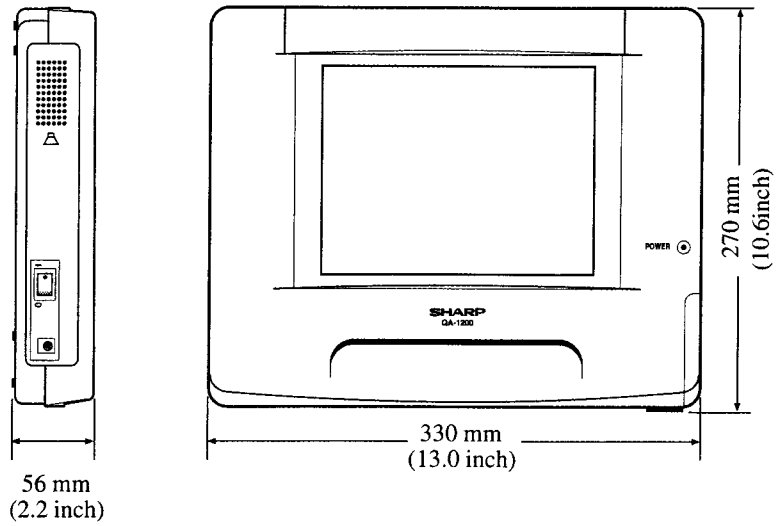
Transporting the Unit

When transporting the projection panel over a long distance. Use a carry case*, to prevent jarring or strong shocks to the unit during transportation.

* Optional Sharp soft and hard carrying cases are available. See your local dealer.

8. SPECIFICATIONS

(a) EXTERNAL DIMENSIONS



(b) MECHANICAL SPECIFICATIONS

1. Panel	Dimensions:	330(W)×270 (D)×56(H) mm (13.0 × 10.6 × 2.2 inches)
	Net weight:	Approx. 2.4 kg (panel only)
2. LCD	LCD type:	8.4" (diagonal) Color TFT (Thin Film Transistor) LCD
	Display area:	170.88(W) × 129.6(H) mm (6.7 × 5.1 inches)
	Number of dots (pixels):	(640 × 3) (W) × 480 (H) (921,600 dots total)
	Pixel pitch:	0.267(H) × 0.27(V) mm
	Contrast ratio:	150:1 (typical)

(c) ENVIRONMENTAL CONDITIONS

Operating temperature:	0°C – +30°C (+32°F – +86°F)
Storage temperature:-	-20°C – +60°C (-4°F – +140°F)
Humidity:	Ta≤40°C: 90% RH
	Ta>40°C: Absolute humidity shall be less than Ta=40°C/90% RH (Ta: Temperature of the LCD)

WARNING

Do not use the projection panel with any overhead projector that can raise the temperature of the LCD to 45°C (113°F) under normal conditions.
Do not expose or store the projection panel in an area where there is direct sunlight on the panel for any period of time.

(d) ELECTRICAL SPECIFICATIONS

Power supply: AC 100 - 240V ± 10% at 50/60 Hz (only AC adaptor)

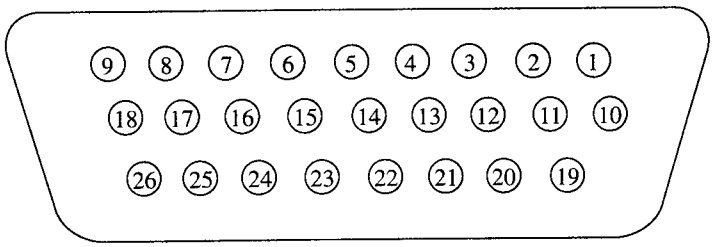
Power consumption: Approx. 32W AC adaptor input
Approx. DC12V, 1.95A panel only

(e) INPUT TERMINALS

1) Computer video input connector

Pin assignments

1	Digital Secondary Green (g.I)	14	Analog Green Return
2	Digital Secondary Blue (b. Video)	15	Analog Red Return
3	Digital Secondary Red (r)	16	Digital GND
4	Analog Blue	17	N.C.
5	Analog Green	18	N.C.
6	Analog Red	19	Vsync (Digital)
7	Digital GND	20	Hsync/Csync(Digital)
8	Test 1 (MacintoshII/Macintosh LC)	21	N.C.
9	Test 2 (D/A)	22	N.C.
10	Digital Green	23	Digital GND
11	Digital Red	24	Digital GND
12	Digital Blue	25	Digital GND
13	Analog Blue Return	26	N.C.



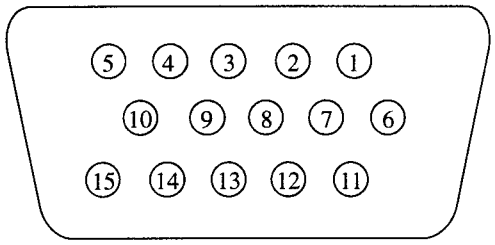
TEST 1 LOW (GND) : Apple® Macintosh II Video Card or Apple® Macintosh LC
OPEN (N.C.): Others

TEST 2 LOW (GND) : Analog RGB input
OPEN (N.C.): Digital RGB input

2) External monitor output connector

Pin assignments

1	Analog R (75Ω load)
2	Analog G (75Ω load)
3	Analog B (75Ω load)
5	Digital GND
6	Analog R Return
7	Analog G Return
8	Analog B Return
10	Digital GND
	Shield
11	Digital GND
13	Hsync (Digital)
14	Vsync (Digital)
4, 9, 12, 15	Not connected



3)VGA/MCGA signal cable

Connect to IBM® PS/2 VGA or MCGA output port.

Pin assignments

Computer Pin No.	Connection	Projection panel Pin No.	Signal
1	⟷	6	Analog R (75Ω load)
2	⟷	5	Analog G (75Ω load)
3	⟷	4	Analog B (75Ω load)
6	⟷	15	Analog R Return
7	⟷	14	Analog G Return
8	⟷	13	Analog B Return
10	⟷	24	Digital GND
		23	Shield
11	⟷	7	Digital GND
13	⟷	20	Hsync (Digital)
14	⟷	19	Vsync (Digital)
—	→	9	(Connected to pin 16 on panel)
		16	GND (Connected to pin 9 on panel)
4, 5, 9, 12, 15		1~3, 8, 10~12, 17 18, 21, 22, 25, 26	Not connected

4) Macintosh II signal cable

Connect to an Apple Macintosh II video card or Macintosh LC output port.

Pin assignments

Computer Pin No.	Connection	Projection panel Pin No.	Signal
2	⟷	6	Analog R (75Ω load)
5	⟷	5	Analog G (75Ω load)
9	⟷	4	Analog B (75Ω load)
1	⟷	15	Analog R Return
6	⟷	14	Analog G Return
13	⟷	13	Analog B Return
4	⟷	24	Digital GND
4	⟷	7	Digital GND
3	⟷	20	Csync (Digital)
4	⟷	7	Digital GND
—	⟷	9	Test 2 (Connected to pin 16 on panel)
		16	GND (Connected to pin 9 on panel)
7, 8, 10, 11, 12, 14, 15		1~3, 10~12, 17~ 19, 21, 22, 26	Not connected
4	⟷	23	Shield
—	⟷	8	Test 1
		25	Digital GND

5) External Macintosh monitor cable

Connect to external Macintosh monitor input

Pin assignments

Projection panel Pin No.	Connection	Computer Pin No.	Signal
1	⟷	2	Analog R (75Ω load)
2	⟷	5	Analog G (75Ω load)
3	⟷	9	Analog B (75Ω load)
6	⟷	1	Analog R Return
7	⟷	6	Analog G Return
8	⟷	13	Analog B Return
10	⟷	4	Digital GND
Shield	⏚	Shield	Shield (GND)
11	⟷	14	Digital GND
13	⟷	3	Csync (Digital)
14	⟷	12	Vsync (Digital)
—			
4, 5, 9, 12, 15		7, 8, 10, 11, 15	Not connected

f) Compatible Video Parameters

Input signal	Display size		Period		Video level TTL/analog (Vpp)	Notes
	Horizontal (dot)	Vertical (line)	Horizontal (KHz)	Vertical (Hz)		
IBM VGA	720	400	31.469	70.00	0.7	*1
	640	480	31.469	59.94	0.7	
IBM VGA/MCGA	640	400	31.469	70.00	0.7	
	640	350	31.469	70.00	0.7	
IBM EGA	640	350	21.851	59.70	TTL	Requires optional signal cable (sold separately)
	640	350	21.618	59.07	TTL	
IBM CGA	640	200	15.700	59.92	TTL	• Requires optional signal cable (sold separately) • Settings are made in the 40ch-Graphic mode • Displayed as a 400-line display.
IBM MDA	720	350	18.432	49.82	TTL	*2 Requires optional signal cable (sold separately)
Hercules HGC/HGC+	720	350	18.141	49.03	TTL	
	720	348	18.519	50.05	TTL	
Hercules Incolor	720	350	21.542	58.22	TTL	
	720	348	21.991	59.43	TTL	
Apple Macintosh II Video card	640	480	35.000	66.68	1.0	
Apple Macintosh LC	640	480	34.971	66.67	0.7	
	512	384	24.480	66.67	0.7	Requires optional signal cable (sold separately)
Apple Macintosh +/SE	512	342	22.255	60.15	TTL	Requires optional A/D conversion adaptor (sold separately).
Apple II/IIe/II+/IIc/IIgs	560	192	15.700	59.92	TTL	• Requires optional A/D conversion adaptor (sold separately). • Operates in the IBM CGA mode.
AT & T 6300WGS 6386WGS 6312WGS 6286WGS	640 640	400 350	25.862 25.862	59.87 59.87	TTL TTL	• Requires optional signal cable (sold separately). • Operates in the 400-line mode even during 350-line signal input

* Analog video level values are for 75Ω load.
* 720-dot horizontal input data is displayed compressed to 640 dots.

*1: Menu selection allows choosing between compression of 720-dot image width to 640-dot display width, or display of 640 out of 720 dots of images full width.

*2: Only 640 dots are displayed out of the 720 dots of the images full width.

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